Smart One
DOCSIS Cable Modem

User's Manual

Model Number : CMX300V2

FCC Statement

This device complies with Class B Part 15 of the FCC Rules. The device generates, uses and can radiate radio frequency energy and, if not installed and used as instructed, may cause harmful interference to radio communication. Only shielded USB and Coaxial cables are to be used with this device in order to ensure compliance with FCC emissions limits. Accessories connected to this device by the user must comply with FCC Class B limits. The manufacturer is not responsible for any interference which results from use of improper cables, or which results from unauthorized changes or modifications to the device.
"A Minimum 26 AWG Line Core should be used for connection to the cable modem"

Warranty

Items sold by manufacturer/distributor/agent, hereinafter called "Seller", are warranted only as follows: Except as noted below Seller will correct, either by repair or replacement at its option, any defect of material or workmanship which develops within one year after delivery of the item to the original Buyer provided that evaluation and inspection by Seller discloses that such defect developed under normal and proper use. Repaired or replaced items will be further warranted for the unexpired term of their original warranty. All items claimed defective must be returned to Seller, transportation charges prepaid, and will be returned to the Buyer with transportation charges collect unless evaluation proves the item to be defective and that the Seller is responsible for the defect. In that case, Seller will return to Buyer with transportation charge prepaid. Seller may elect to evaluate and repair defective items at the Buyer's site. Seller may charge Buyer a fee (including travel expenses, if needed) to cover the cost of evaluation if the evaluation shows that the items are not defective or that they are defective for reasons beyond the scope of this warranty.

The Seller makes no warranty concerning components or accessories not manufactured by it. However, in the event of failure of such a part, Seller will give reasonable assistance to Buyer in obtaining from the manufacturer whatever adjustment is reasonable in light of the manufacturer's own warranty. Seller will not assume expense or liability for repairs made outside the factory by other than Seller's employees without Seller's written consent.

SELLER IS NOT RESPONSIBLE FOR DAMAGE TO ANY ASSOCIATED EQUIPMENT, NOR WILL SELLER BE HELD LIABLE FOR INCIDENTAL, CONSEQUENTIAL, OR OTHER DAMAGES. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING THE IMPLIED WARRANTY OF "MERCHANTABILITY" AND "FITNESS FOR PARTICULAR PURPOSE."

Trademarks

All trademarks are the property of their respective owners.

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Chapter 1 Introduction

This chapter provides an introduction to the DOCSIS 1.0/1.1 equivalent Cable Modem User Guide. In addition, this chapter provides a general description of the Cable Modem's product features.

1.1 About This Manual

This manual is divided into the following sections:

Chapter 1: Introduction
Provides a general introduction to the Cable Modem Reference Design.

Chapter 2: Before You Begin
Provides preliminary information needed to understand your product's installation. We recommend reading this chapter for instructions on how to make the most of your new Cable Modem.

Chapter 3: Hardware Installation
Shows you how to install the Cable Modem including instructions for connecting the Hybrid-Fiber Coax (HFC) cable network, and the data network to your personal computer's Ethernet Network Interface Card (NIC) or Universal Serial Bus (USB).

Chapter 4: Ethernet Installation
Shows you how to install the Cable Modem through Ethernet Port.

Chapter 5: USB Installation (optional)
Shows you how to install the Cable Modem through USB Port.

Chapter 6: Cable Modem LED Operation
Provides operating instructions for using your new Cable Modem.

Appendix A: Cable Modem Specifications
Provides the specifications for the Cable Modem.

Appendix B: Questions and Answers
Provides the answers for questions during the cable modem installation andapplications.

Appendix C: Glossary
Provides the "Term" definition and explanation for Cable Modem.

1.2 General Description

This is a complete MCNS DOCSIS 1.0/1.1 equivalent Cable Modem product. This DOCSIS 1.0/1.1 equivalent product works with all existing DOCSIS 1.0/1.1 equivalent head-end equipment and Multiple Service Operator (MSO) networks.

The Cable Modem interfaces between a Hybrid-Fiber Coax (HFC) network, a 10Base-T/100Base-TX Ethernet NIC(A-MDIX) and an USB port (optional) inside your personal computer.

1.3 Features

- § DOCSIS 1.0/ DOCSIS 1.1 equivalent
- § Ethernet 10Base-T/100Base-TX(A-MDIX)or USB (optional) Interface for easy installation
- § Status LEDs (Power, Cable, LAN, USB, Activity) or (Power, Cable, LAN, RX, TX)
- § QoS
- § MSO SNMPv3 remote network management
- § MSO Web Browser management auto detect CM status
- § Field software upgradeable by MSO
- § DHCP server support (Auto disable in MSO operation mode)
- § Provide MIBs DOCSIS1.0/1.1
- § Supports up to 15 networked clients

If you experience problems with your Cable Modem, please contact your Field Applications Engineers at your local Sales Office. He or she will be happy to help you with all of your technical needs.

Chapter 2 Before You Begin

Before installation, please check the following requirements with your computer. This cable modem equips ETHERNET and USB (optional) interfaces. You can choose either one to connect to the cable modem or connect Ethernet and USB simultaneously.

2.1 System Requirements

l System Requirement of Ethernet Connection

1. IBM Compatible, Macintosh or other workstation supports TCP/IP protocol.
2. An Ethernet port supports 10Base-T/100Base-TX Ethernet connection.
3. Subscribed to a Cable Television company for Cable Modem services.

l System Requirement of USB Connection (optional)

1. IBM Compatible PC with Microsoft Windows 98/2000/Me/XP.
2. PC with available USB Port.
3. Subscribed to a Cable Television company for Cable Modem services.

If using a MSO network, contact your local cable operator to ensure the termination circuit is removed and service is available.

2.2 Safety Precautions

For your protection, observe the following safety precautions when setting up and using your equipment. Failure to observe these precautions can result in serious personal injury and damage to your equipment.

- Make sure the voltages and frequency of the power outlet match the electrical rating labels on the AC Adapter.
- Do not place any object on top of the device or force it into a confined space.
- Never push objects of any kind through openings in the casing. Dangerous voltages may be present. Conductive foreign objects could produce a short circuit that could

cause fire, electrical shock, or damage to the equipment.
- When installing the CABLE MODEM, be sure to observe the anti-static caution in the installation section of this user's guide. This will prevent damage to the board and other components.
- Whenever there is danger of lightning, disconnect the power cable and the Hybrid-Fiber Coax cable from the cable modem to prevent damage to the unit. The use of an AC protection device will not completely protect the cable modem product from damage caused from the transmission across the Hybrid-Fiber Coax network.

2.3 Unpacking and Inspection

Included in the kit is the following:
- Cable Modem
- AC Adapter
- Installation Guide
- Ethernet RJ-45 Cable
- USB Cable (optional)
- USB Driver Wizard and manual CD-ROM or manual only CD-ROM
- Case Holder

If any items are missing or damaged, please contact your local Sales Office.

2.4 Operation Environment

Tables 1 and 2 define the maximum ratings for the CABLE MODEM.

Table 1. Maximum Ratings in Non-Operational or Storage Conditions

NON-OPERATIONAL OR STORAGE CONDITIONS	
Temperature	– 10°C to +60 °C
Humidity	10% to 90% non condensing

Table 2. Operational Conditions

OPERATIONAL CONDITIONS	
Temperature	0 °C to +40 °C
Humidity	10% to 90% non condensing

Chapter 3 Hardware Installation

This chapter describes the proper steps for connecting your new Cable Modem. Please be sure to follow the steps in the sequence outlined below. Failure to do so could result in improper operation or failure of your Cable Modem.

Step 1:

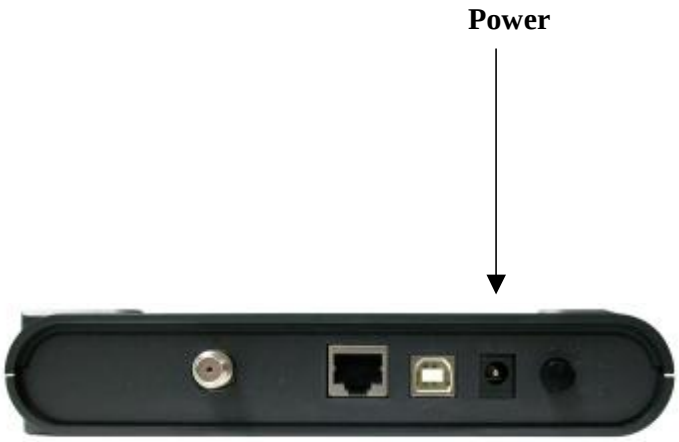
Connect a DOCSIS 1.0/1.1 equivalent cable feed to the F-connector on the back of the cable modem as illustrated in Figure 1. Ensure that the center conductor of the 75 ohm coaxial cable is inserted directly into the center of the F-connector. Secure the coaxial cable by carefully threading the outer shell of the coaxial cable connector onto the F-connector in a clockwise direction until tight. Be careful not to over-tighten the connector or you may damage either the connector or the cable modem.
NOTE: To speed up the initial cable modem registration process, the coaxial cable should be connected to the modem prior to the power connector.

Figure 1. Connecting the Coaxial Cable

Step 2:

Connect the AC Adapter to the Cable Modem by inserting the barrel-shaped connector into the mating power connector on the back of the Cable Modem as illustrated in Figure 2. Exercise carefully to ensure the connectors are properly aligned prior to insertion and ensure the two connectors engage completely. The cable modem is shipped with an AC adapter. Remember to use only power adapter that came with the cable modem. Other power adapters might have voltages that are not correct for your particular cable modem. Using a power adapter with the wrong voltage can damage the cable modem. The cable modem power input requires 12 VDC input with minimum 1000 mA current. The +12 V is on the center connector, and ground is on the outer connector.

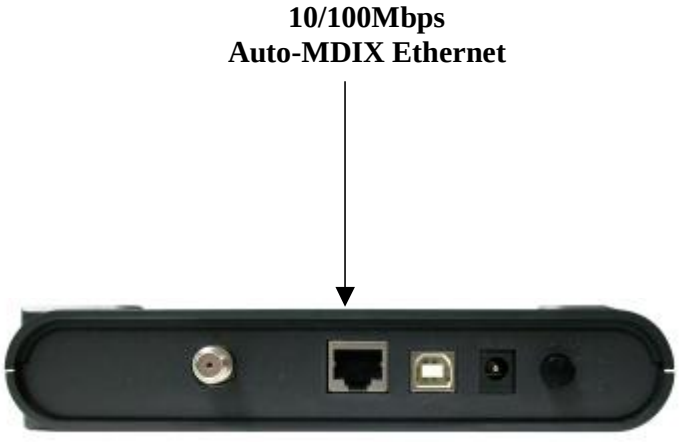
Figure 2. Connecting the AC Adapter



Step 3-a:

Connect the Cable Modem to an IEEE 802.3 10BaseT / 802.3u 100Base-TX Network using a RJ-45 male-terminated CAT-5 cable as illustrated in Figure 3a.

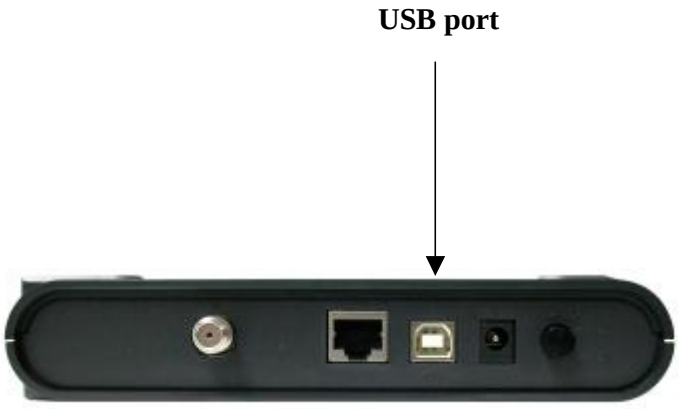
Figure 3a. Connecting to a Network Interface Card



Step 3-b (optional):

Notice: Some serials may not have USB port.
Connect the USB cable to the Cable Modem by inserting the rectangular end of an USB cable into the USB port of the Cable Modem as illustrated in Figure 3b. Ensure the connectors lock together by listening for a snap.

Figure 3b. Connecting the USB Cable



CAUTION 1: Connecting to More Than one Computer Devices:
This cable modem provides you the feature for Ethernet and USB interfaces to operate on 2 different computer devices simultaneously. ***However, you have to obtain additional IP addresses from your cable service provider.***

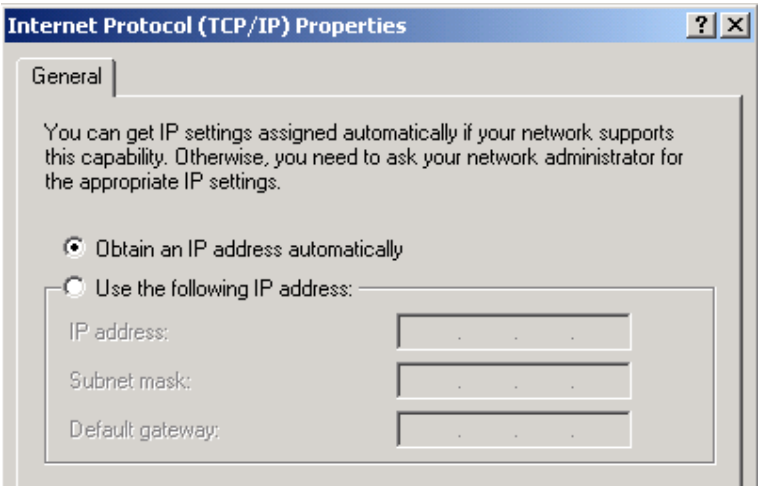
CAUTION 2: Do not using USB and Ethernet in one computer at the same time.
You are strongly recommended to connect to the Internet using ***either the Ethernet port or the USB port only****. In most cases CATV ISPs provide one IP address only, having the USB and Ethernet cables plugged into the cable modem at the same time might cause you to access the Internet improperly.*

Chapter 4 Ethernet Installation

Setting Up the Computer to Use an Ethernet Connection

The LAN port you are using is **auto-negotiating 10/100Mbps (Switch)** Ethernet Interface. You can use the Ethernet port to connect to the Internet with an Ethernet network device such as NIC/Hub/Switch through RJ45.

Before you connect to and install the cable modem, please set the IP address to "Obtain an IP address automatically" as below and do ensure the TCP/IP protocol is installed on your system and configured correctly in your PC.


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:

Following is an **example** of configuring the TCP/IP Protocol on Windows 98 Operating Systems,

1. Click "Start" button, choose "Settings, and then "Control Panel", Double click on the "Network" icon click "'*Properties*".
2. A list of installed network components appears. Look for an entry named *TCP/IP*. This entry may be followed by an arrow and a description of the NIC hardware device installed in the computer. If you don't see "TCP/IP" listed anywhere in the "The following network components are installed" box, click the "Add" button, choose "Protocol", and click the "Add" button. Select "Microsoft" as the manufacturer and then scroll down in the list on the right to find "TCP/IP". If you see "TCP/IP" listed, proceed to step 4
3. Click the OK button. You will be prompted to insert the Windows 98 installation/upgrade CD.
4. Scroll down in the box until you find a line that says "TCP/IP -> " followed by the name of your Ethernet adapter. Click on "Properties" and choose "Obtain an address automatically" which means that your PC has been configured to use DHCP (Dynamic Host Configuration Protocol).
5. Click *O*K.

Congratulations! You have successfully set up your new Cable Modem.

***CAUTION**: Using the Ethernet port allows you to use a hub to connect multiple computers to the cable modem. To do this, you may need to obtain additional IP addresses from your cable service provider.*

Chapter 5 USB Installation (OPTIONAL)

Notice : Some serials of Cable Modem may not have USB port.
Using the USB port to connect to the Internet allows you to install the cable modem more quickly and easily than connecting to the Internet using the Ethernet port, since you do not need to install a network interface card (NIC).

Using USB with the Windows 98 or Windows Me Operating System

To use the USB port with Windows 98/Me:

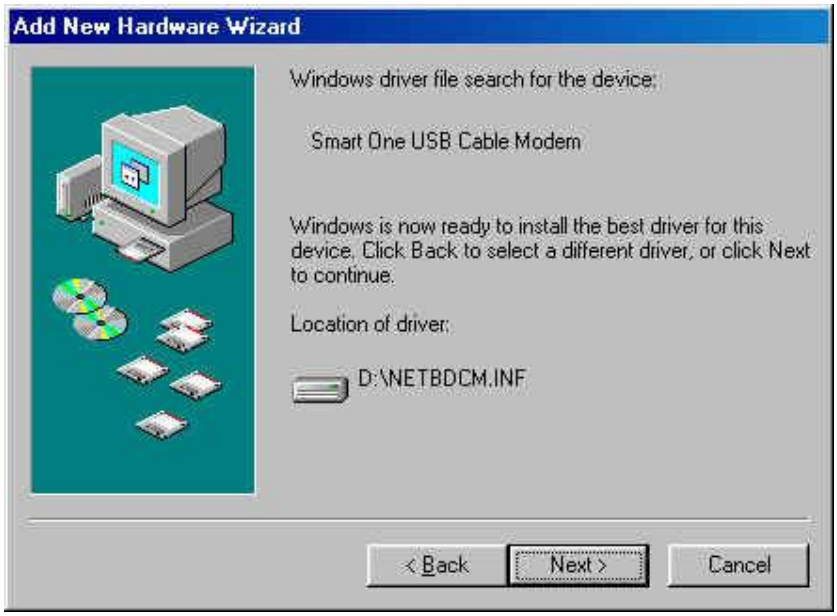
1. Connect USB cable from PC to Cable Modem
2. Connect RF cable and Power on Cable Modem. Wait until Cable Modem register, it will take from 40 sec to 4 min depends on Network traffic.
3. Cable Modem may reboot if you previously connect it through Ethernet port
4. Windows will prompt new hardware found

5. Insert the Driver CD-ROM
6. Click “Search for the …” then “Next”

Add New Hardware Wizard
What do you want Windows to do?
Search for the best driver for your device. (Recommended).
Display a list of all the drivers in a specific location, so you can select the driver you want.
< Back
Next >
Cancel

7.Select CD-ROM drivers , and click “Next“

8. Windows will locate the driver automatically


Add New Hardware Wizard
Windows driver file search for the device:
Smart One USB Cable Modem
Windows is now ready to install the best driver for this device. Click Back to select a different driver, or click Next to continue.
Location of driver:
D:\NETBDCM.INF
< Back
Next >
Cancel

9. After windows install the USB driver. Click Finish and Windows will ask for reboot

Add New Hardware Wizard
Smart One USB Cable Modem
Windows has finished installing the software that your new hardware device requires.
< Back
Finish
Cancel

Using USB with the Windows 2000 or Windows XP Operating System

To use the USB port with Windows 2000/XP:

1. Connect USB cable from PC to Cable Modem
2. Connect RF cable and Power on Cable Modem. Wait until Cable Modem register,

it will take from 40 sec to 4 min depends on Network traffic

3. Cable Modem may reboot if you previously connect it through Ethernet port
4. Windows will prompt new hardware found

5. Insert the Driver CD-ROM
6. Click “Search for a suitable driver ….” then “Next”

Found New Hardware Wizard
Install Hardware Device Drivers
A device driver is a software program that enables a hardware device to work with an operating system.
This wizard will complete the installation for this device:
CMX300v2
A device driver is a software program that makes a hardware device work. Windows needs driver files for your new device. To locate driver files and complete the installation click Next.
What do you want the wizard to do?
Search for a suitable driver for my device (recommended)
Display a list of the known drivers for this device so that I can choose a specific driver
< Back
Next >
Cancel

7.Select CD-ROM drivers , and click “Next“.

8.Windows will locate the driver automatically

Found New Hardware Wizard
Driver Files Search Results
The wizard has finished searching for driver files for your hardware device.
The wizard found a driver for the following device:
CMX300v2
Windows found a driver for this device. To install the driver Windows found, click Next.
g:\netbdcm.inf
< Back
Next >
Cancel

9.After windows install the USB driver. Click Finish and Windows will ask for reboot

Found New Hardware Wizard
Completing the Found New Hardware Wizard
Smart One USB Cable Modem
Windows has finished installing the software for this device.
To close this wizard, click Finish.
< Back
Finish
Cancel

Chapter 6 Cable Modem LED Operation

There are no user controls on your cable modem. To operate, simply apply power to the unit by inserting the AC Adapter into an AC power outlet. Connecting the AC adapter to an AC protection circuit is always recommended.

1. LEDs mean

Your cable modem provides status information to the user. Five Light-Emitting-Diodes (LEDs) located on the front panel provide this information as detailed in Table 3.1 or Table 3.2.

Table 3.1 LED Indicators (with USB port)

NAME	*COLOR*	*MODE*	*STATUS*
Power	Green	On	O.K.
Cable	Green	On	Ready
		Blinking	Not Ready
LAN	Green	On	Connected
USB	Green	On	Connected
Activity	Green	Blinking	Cable Modem Transmit/Receive Data via Ethernet or USB

Table 3.2 LED Indicators (without USB port)

NAME	*COLOR*	*MODE*	*STATUS*
Power	Green	On	O.K.
Cable	Green	On	Ready
		Blinking	Not Ready
LAN	Green	On	Connected
RX	Green	Blinking	Receive Data from Cable (RF)
TX	Green	Blinking	Transmit data from Ethernet to Cable (RF)

2. LED power-on sequence:

a). Power LED on. (It indicates that CM gets power from the power adapter.)
b). All LEDs but POWER blink 2X. (Blinking twice for a second after booting up. It means SDRAM and Flash are O.K., and CM is ready to work.)
c).Cable LED blinks fast. (Blinking thrice per second. CM is trying to find DS frequency.)
d). Cable LED blinks slow. (Blinking once per second. CM is trying to find US channel, DS was found now.)
e). Cable LED blinks really slow. (Blinking 2 seconds a time. CM is trying to register to CMTS/DHCP/TFTP.)
f). Cable LED ON. (Solid on. CM is operational.)

Appendix A: Cable Modem Specifications

Table 4. RF Downstream Specification

PARAMETER	*VALUE*	*NOTES*
Center Frequency	91 MHz to 857 MHz +/- 30 kHz	
Level Range	-15 dBmV to +15 dBmV	One Channel
Symbol Rate	5.056941 Msym/sec (30 Mbps) 5.360537 Msym/sec (43 Mbps)	64QAM 256QAM
Bandwidth	6 MHz	
Total Input Power	<30 dBmV	
Input Impedance	75 Ohms	
Input Return Loss	>6 dB	88 MHz to 860 MHz

Table 5. RF Upstream Specification

PARAMETER	*VALUE*	NOTES
Frequency	5 MHz to 42 MHz	Edge to Edge
Level Range	+8 to +58 dBmV +8 to +55 dBmV	QPSK 16QAM
Modulation	QPSK and 16QAM	
Symbol Rate	320K,640K,1280K,2560K,5120Kbps 640K,1280K,2560K,5120K,10240Kbps	QPSK 16QAM
Bandwidth	200K, 400K, 800K, 1600K, and 3200 KHz	At Edges
Output Impedance	75 Ohms	
Output Return Loss	>6 dB	5 MHz to 42 MHz

Table 6. Electrical Specification

PARAMETER	MEASURED VALUE	NOTES
Power Adapter output voltage lower limit	11.4 VDC	
Power Adapter output voltage upper limit	12.6 VDC	
Current consumption	560 mA Normal mode	Normal mode

Table 7. Physical Specification

PARAMETER	*VALUE*	NOTES
Size	181mm (H) x 143mm (L) x 36 mm (W)	
Weight	Net Weight: 450g ± 30g Gross Weight: 900g ± 60g	

Table 8. Environmental Specification

PARAMETER	VALUE	NOTES
Operating Temperature	0 ° C to +40 ° C	
Operating Relative Humidity	10% to 90%	Non-condensing
Operating Altitude	-100 to +7,000 feet	
Storage Temperature	-10 ° C to +60 ° C	

Appendix B: Questions and Answers

Section 1: Troubleshooting Modem LED Problems

Troubleshooting the modem portion of this Cable Modem begins with observing the front panel lights (also called LEDs - light emitting diodes). The pattern of these lights indicates the status of the modem. Interpreting the pattern correctly can indicate whether the modem is functioning properly or not. If there is a problem, the lights provide clues as to what the problem might be. The Cable Modem does not require any routine maintenance. If you cannot identify and correct a fault using these troubleshooting procedures, please contact your cable television (CATV) Internet Service Provider (ISP).

Question 1: The Power Light Is Off
Answer:
The normal state for this light is solid red. If the Power light is off, then the modem is not receiving power. Possible Solutions:
1. Check to make sure the power cable is firmly plugged into both the cable modem and the electrical outlet. Try unplugging, then reconnecting the cable at each end.
2. Check that the wall outlet is working. Test it by using a light or some other device in the suspect outlet.
3. If the power light remains off, the external power supply or the power cord is probably defective. Contact the supplier of the Cable Modem for assistance.

Question 2: The Cable Light Is Off
Answer:
The normal state for this light is solid green. If the Cable Light Is Off, then the modem is not detecting the downstream radio frequency (RF) signal provided by the cable network. This could be caused by any of the following:
• Radio frequency noise in the home
• Damaged cable
• Bad or loose cable connections
• Unterminated connections
• Problem with the cable on the street
• Problem in the cable network

Possible Solutions:
1. Disconnect and then reconnect the power. This will automatically reset the modem.
2. Wait at least 4 minutes.
3. If the Cable light is still off, then there could be a problem with the cable wiring. Check all cables between the modem and the ground terminal outside the house. Unplug the power again, then plug it back in as before.
4. If the Cable light is still off, there might be a problem with the cable network or the modem. Contact your cable provider.

Question 3: The LAN Light Is Off
Answer:
If the LAN light is on, the Cable Modem's Ethernet port is connected to the computer correctly. If the modem is having problems transferring data, check the Cable light, as described in the above Cable Light subsection, to determine the state of the modem.
If the LAN light is off, the modem is not detecting the Ethernet network interface card.
Possible Solutions:
1. Make sure the cable between your computer's Ethernet card and the modem is securely fastened at each end.
2. There may be a green "carrier detect" light on the back of the Ethernet card. It should be a steady green. If the cable is securely connected, then the Ethernet card may have loosened from its socket. Open up the computer and make sure the card is firmly seated in place.
3. If you have plugged a hub into the port, you need to use a crossover Ethernet cable instead of a straight through cable.
4. Try replacing the cable between the modem and the Ethernet card.
5. If the problem persists, it could indicate a problem with the Ethernet card or the modem. Contact the manufacturer of the Ethernet card or your cable provider.

Question 4: The RX Light Is Off
Answer:
The RX Light flickering On and Off indicates that the cable network is successfully receiving data. If the RX light is off, then the cable network is not receiving data from the modem.
If the cable network is having problems transferring data, check the Cable light as described above.

Question 5: The TX Light Is Off
Answer:
The TX Light flickering On and Off indicates that the cable network is successfully transmitting data. If the cable network is having problems transferring data, check the Cable light, as described above.
If the TX light is off, then the cable network is not transmitting data to the modem. If the modem is having problems transferring data, check the Cable light, as described above.

Question 6: All LEDs look right, but I still cannot access the Internet
Answer:

If the Power, Cable LEDs, and LAN LED are lighted, the cable modem is operating properly. Try shutting down the computer and then turning it on. This causes the computer to re-establish communications with your cable service provider's computer.
Power cycle the cable modem by removing the power adapter from its outlet and then plugging it back into the outlet. Then try reconnecting to your cable service provider.
Verify that you have installed TCP/IP properly, and that the TCP/IP parameters provided by your cable service provider are correct for your computer.
If you are using a cable line splitter so that you can connect the cable modem and a television at the same time, try removing the splitter and reconnecting the cables so that the cable modem is connected directly to the cable wall jack. Then try reconnecting to your cable service provider.

Section 2: Troubleshooting Network Problems

If you have been referred to this section from one of the paragraphs above then there is a possible problem with your cable network. Contact your CATV ISP to check if the network is functioning correctly. If the network is functioning correctly then there is likely a problem with your cable modem. Contact your CATV ISP.

Section 3: Troubleshooting User Application Problems

Question 7: If CATV ISP provides one IP address only, how do I switch CPE?
Answer: Possible Solutions:
You may switch CPE in two ways:

1. On same computer, switch between Ethernet and USB interfaces
2. Switch from A computer to B computer

No matter how you switch CPE, please be noted that this cable modem is following with DOCSIS specification definition. The DOCSIS rules if changing to the other CPE device, the cable modem learned original CPE information can't be replaced. You have to do **restart (power cycle) or reset** the cable modem and follow with the Ethernet or USB installation to set up your cable modem.

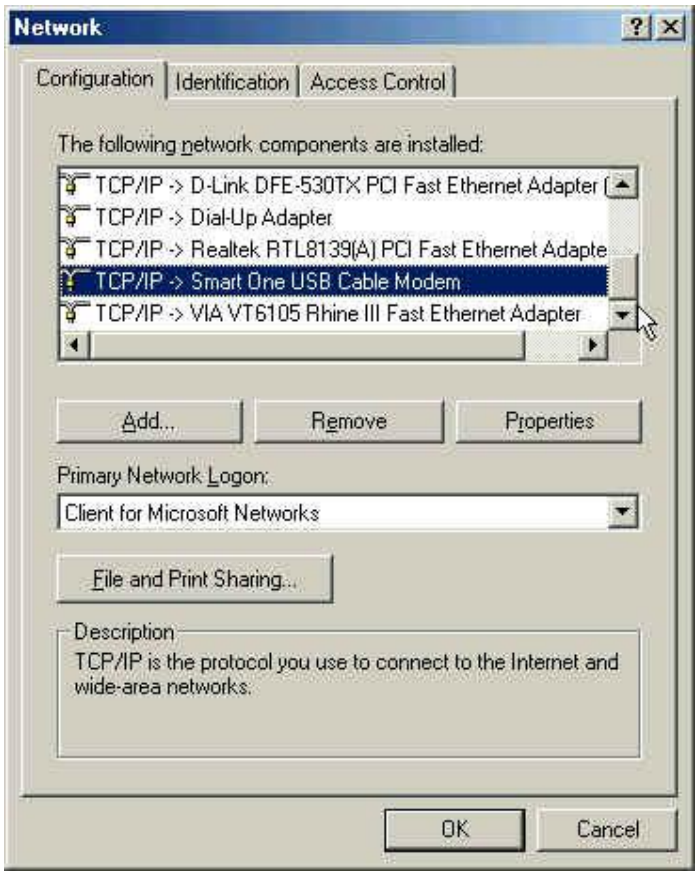
Question 8: How to Offer Multiple Users to Operate on One Cable Modem
Answer: Possible Solutions:

1. ***Connecting to 2 Computer Devices through Ethernet and USB Interfaces:***
   This cable modem provides you the feature for Ethernet and USB interfaces to operate on 2 different computer devices simultaneously. ***However, you have to obtain additional IP addresses from your CATV ISP.***
2. ***Connecting to More Than one Computer Devices through Ethernet Interface using an External Hub:***
   The Cable Modem can simultaneously support up to 15 host devices. The actual number may be limited by your CATV ISP. If your CATV ISP allows you to use multiple IP addresses, you may attach multiple computers or other IP devices using an external hub.

Question 9: How to check if the USB Installation is completed?
Answer:

Using USB with the Windows 98 or Windows Me Operating System

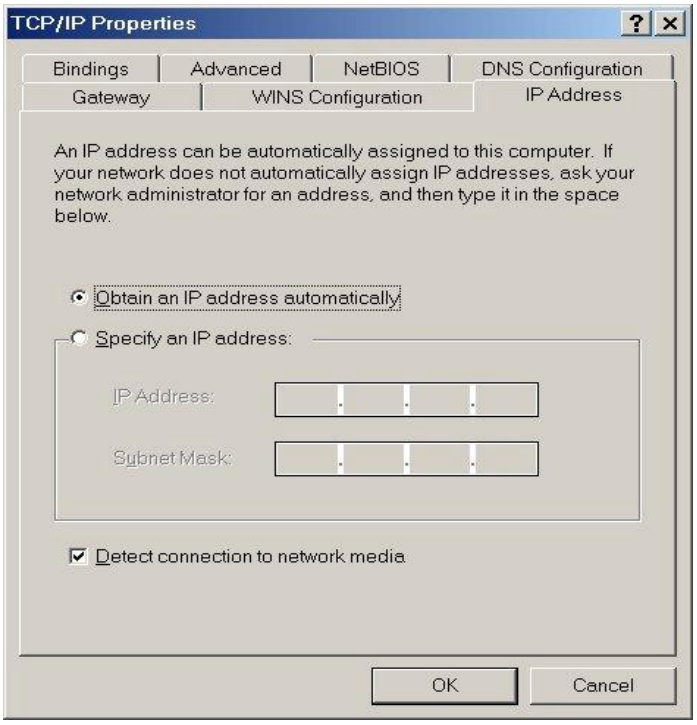
Click Network on Control Panel, make sure USB Cable Modem is installed



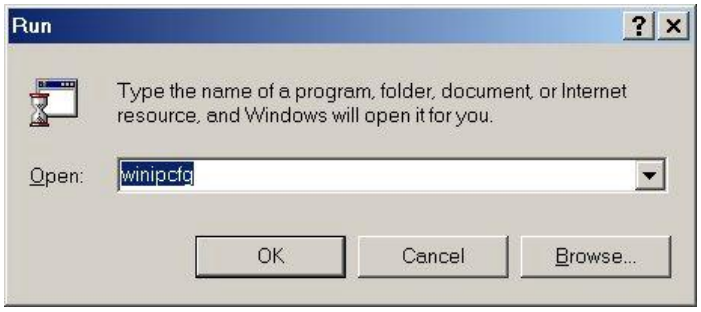
***NOTE**: If you have **no** TCP/IP protocol, press **Add,** highlight Protocol and press **Add.** Then next step is to highlight Microsoft and TCP/IP, and then press OK to complete the adding TCP/IP protocol process.*

2. Click TCP/IP -> Conexant USB Cable Modem
3. Click Properties

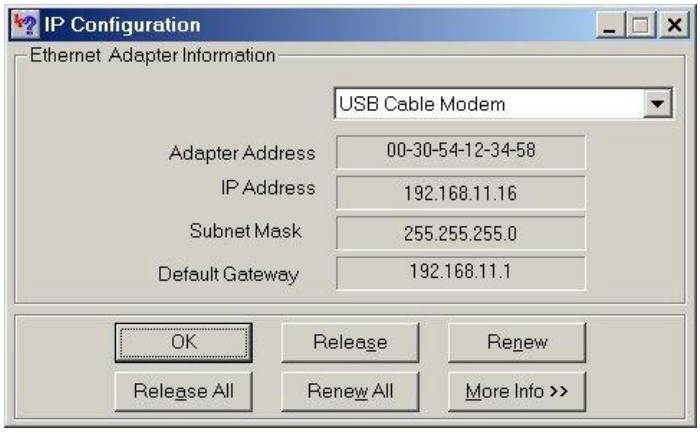
4. Click the IP Address TAB, choose Obtain an IP address automatically


TCP/IP Properties
Bindings
Advanced
NetBIOS
DNS Configuration
Gateway
WINS Configuration
IP Address
An IP address can be automatically assigned to this computer. If your network does not automatically assign IP addresses, ask your network administrator for an address, and then type it in the space below.
Obtain an IP address automatically
Specify an IP address:
IP Address:
Subnet Mask:
Detect connection to network media
OK
Cancel

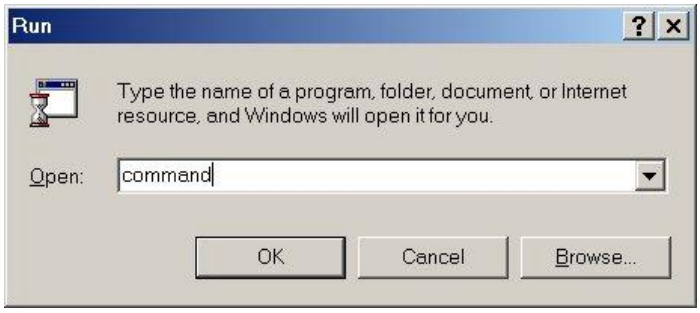
5. For Windows 98/Me, On the Windows Desktop, click Start.
6. Select Run.
7. Type **winipcfg.exe** and Click OK



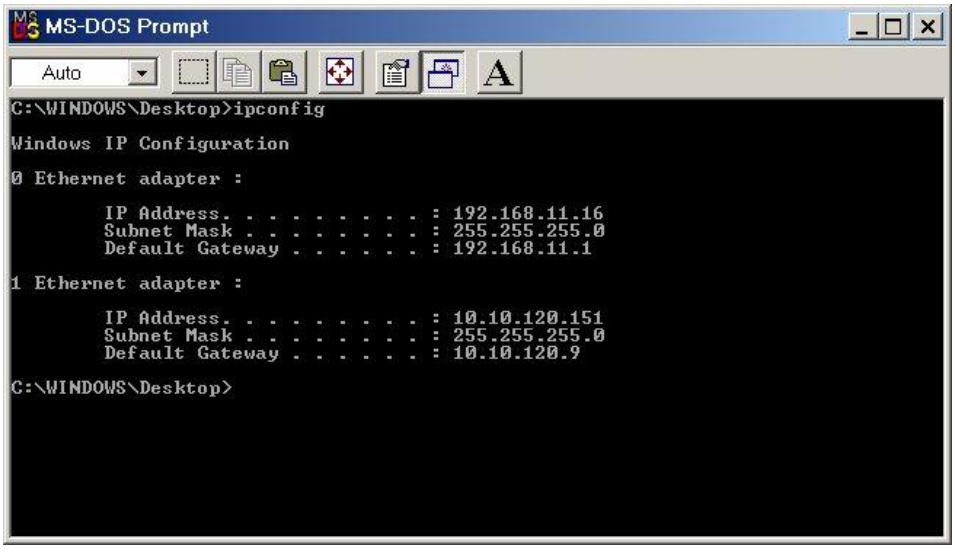
8. Select your adapter name- USB Cable Modem



9. Click Renew. If you don't receive an IP address
10. Type **command** and click ok



11. Type **ipconfig** and press Enter

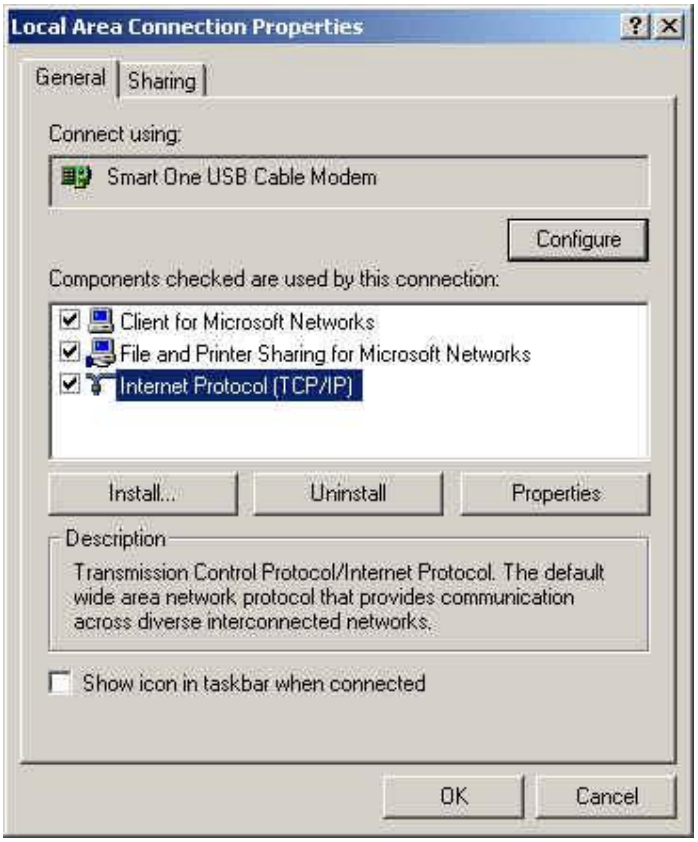

MS-DOS Prompt
Auto
C:\WINDOWS\Desktop>ipconfig
Windows IP Configuration
0 Ethernet adapter :
IP Address. . . . . : 192.168.11.16
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.11.1
1 Ethernet adapter :
IP Address. . . . . : 10.10.120.151
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 10.10.120.9
C:\WINDOWS\Desktop>

12. Type **ipconfig /renew_all** if you don't receive an IP address

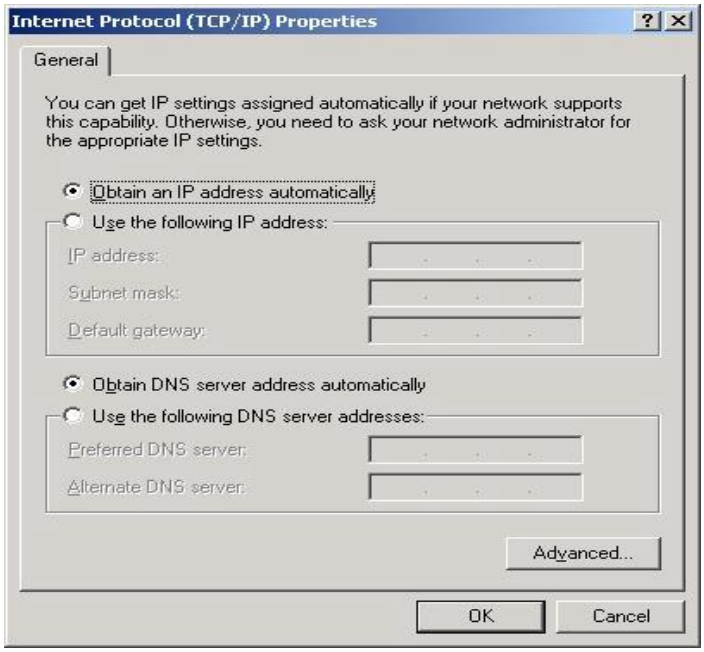
Using USB with the Windows 2000 or Windows XP Operating System

1. Click Network on Control Panel, make sure USB Cable Modem is installed

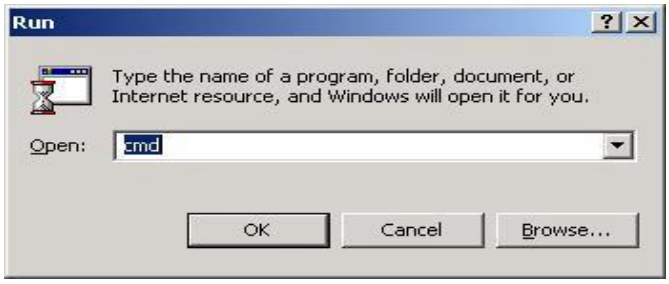
***NOTE**: If you have **no** TCP/IP protocol, press **Add,** highlight Protocol and press **Add.** Then next step is to highlight Microsoft and TCP/IP, and then press OK to complete the adding TCP/IP protocol process.*



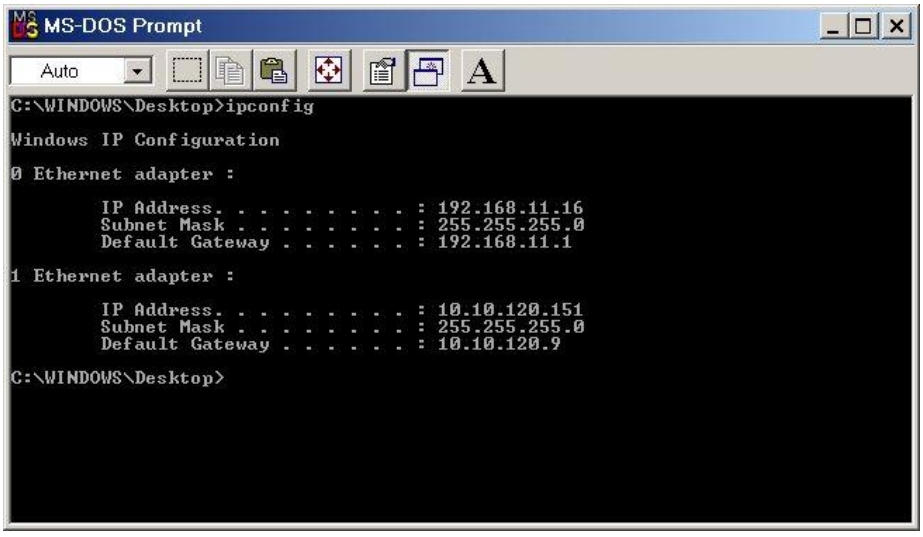
2. Click TCP/IP -> Conexant USB Cable Modem
3. Click Properties
4. Click the IP Address TAB, choose Obtain an IP address automatically


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

5. For Windows 2000, On the Windows Desktop, click Start.
6. Select Run.
7. Type **cmd** and Click OK

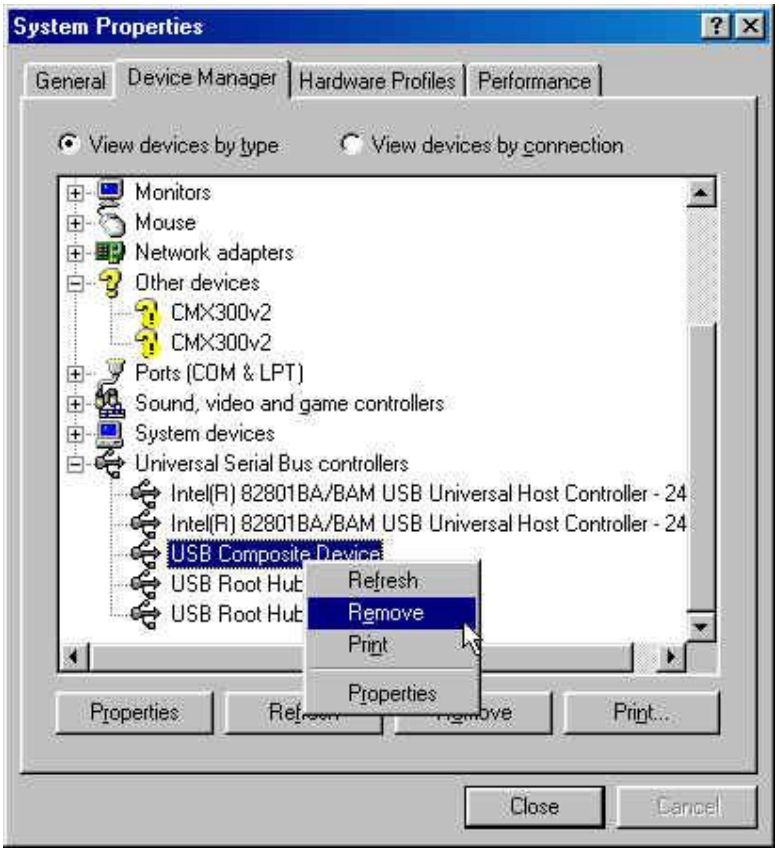


8. Type **ipconfig** and press Enter
9.


MS-DOS Prompt
Auto
C:\WINDOWS\Desktop>ipconfig
Windows IP Configuration
0 Ethernet adapter :
IP Address. . . . . : 192.168.11.16
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.11.1
1 Ethernet adapter :
IP Address. . . . . : 10.10.120.151
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 10.10.120.9
C:\WINDOWS\Desktop>

10. Type **ipconfig /renew** if you don't receive an IP address

Question 10: I could not install USB driver well anyway.
Answer:
In case you do not install USB driver correctly. Please go to DEVICE MANAGER and if you see an yellow exclamation mark follow by "CMX300v2 " , as shown in the picture below this content. Select " USB Composite Device " and click the right button of your mouse, select " Remove ". Now you may exit the DEVICE MANAGER. Please run Cable Modem Wizard again and install USB Driver.


System Properties
General
Device Manager
Hardware Profiles
Performance
View devices by type
View devices by connection
Monitors
Mouse
Network adapters
Other devices
CMX300v2
CMX300v2
Ports (COM & LPT)
Sound, video and game controllers
System devices
Universal Serial Bus controllers
Intel(R) 82801BA/BAM USB Universal Host Controller - 24
Intel(R) 82801BA/BAM USB Universal Host Controller - 24
USB Composite Device
USB Root Hub
USB Root Hub
Refresh
Remove
Print
Properties
Properties
Print...
Close
Cancel

Appendix C: Glossary

Bandwidth
Amount of data that can be transmitted per time.

Baseline Privacy Interface
The baseline privacy interface (BPI) provides cable modem users with data privacy across the cable network by encrypting data traffic between user's cable modem and CMTS.

BER
Bit Error Rate

Browser
A computer program that lets users access and display information from the World Wide Web. Two of the most commonly used browsers are Netscape Navigator and Microsoft Internet Explorer.

CATV
A cable television network system.

CCCM
CPE Controlled Cable Modems

CMTS (Cable Modem Termination System)
The Cable Modem Termination System (CMTS) is the major component of the headend. It interfaces to the cable network, the backbone data network, and several support systems. The CMTS also controls the configuration, registration, and media access of all the cable modems under its control, and determines who gets to transmit when, and for how long.

Coaxial Cable
Coaxial cable ("coax") allows wide bandwidth transmission over long distances. The coax cable is composed of an inner wire surrounded by an outer conductive shield.

CPE
Customer premises equipment

Decryption
The conversion of a coded (encrypted) signal to its original form, by means of an algorithm.

Demodulation
The process of recovering, at the receiver, an original transmitted signal that has been modulated.

Demodulator
A/D, demodulation, error correction, MPEG synchronization

DHCP
Protocol used to automatically assign various network settings, most notably IP addresses

DHCP Client Capabilities
The Dynamic Host Configuration Protocol (DHCP) provides centralized management of the Transmission Control Protocol/Internet Protocol (TCP/IP) client configurations, including the IP address, gateway address, Domain Name Server (DNS) address and more. The DHCP Client enables the Office Cable Modem to acquire TCP/IP settings (such as the IP address, gateway address, and DNS address) from the ISP. This is ideal when one TCP/IP address is provided by the ISP and this address may change from time to time, as is the case with many cable modem Internet accounts.

DNS
Domain Name System. Automated system used to translate computer names into IP addresses. A DNS server is used to look up a name and provide its address to the requesting computer.

DOCSIS
Data Over Cable Service Interface Specification. A standard that defines interface requirements for cable modems involved in high-speed data distribution over cable television networks.

Downstream
Indicates the direction of flow of a data stream from the cable headend to the user's computer.

Duplex Tuner
A tuner that processes both upstream and downstream signals.

Encryption
The scrambling of a signal by means of an algorithm, to prevent unauthorised monitoring of the message.

Ethernet
A network technology that employs a bus topology in which all computers attach to a single cable similar to the stops on a bus line. The Ethernet technology is an accepted worldwide standard whose characteristics are defined by the IEEE 802.3 standards committee.

F connector
A type of coaxial connector, labeled RF on the rear of the cable modem that connects the modem to the cable system.

Firewall
A software or hardware system that prevents unauthorized outside access, theft, deletion, or modification of information stored on a local network. Typically, this unauthorized access would be via an organization's Internet connection.

Headend
The aggregation point in a CATV plant where control equipment is located. The CMTS resides here, as does video broadcast and monitoring equipment.

HFC (Hybrid Fibre/Coax)
A cable system where the cables closest to the Headend are fiber technology, and the cables dropped into individual homes are coaxial. Between these two ends, the signal is converted from fiber to coaxial. The coaxial cable then runs through the branches of the network and is finally dropped into the home.

Hub
Electronic device that accepts data from a sending computer and delivers it to the appropriate destination. Many networks are shaped like a wheel with different computers attached at the ends of the wheel's spokes; the hub is the center of the wheel

ICMP
Part of the TCP/IP protocol used for network diagnosis.

IEEE 802.3
IEEE is the Institute for Electrical and Electronic Engineers. 802.3 refers to the specifications of the Ethernet protocol.

ISP
Internet Service Provider. A commercial organization that provides access to the Internet for its subscribers

IP
Internet Protocol. IP is a standard that defines the format of packets of information sent over the Internet and the mechanism for routing each packet to its destination. IP is the network portion of TCP/IP, the most commonly used protocol suite for the Internet.

IP Address
A unique, 32-bit address assigned to every device in a network. An IP address is composed of a network address and a host address. Each network is assigned an address by a government agency, and each company administrator assigns an address to each host computer.

Latenacy/(Lag)
Excessive response time. Time between sending a request to a server (e.g. web page) and receiving the response.

LED
Light-Emitting Diode. A semiconductor device that emits light when voltage is applied between its terminals. LEDs are used on the cable modems as front panel lights.

MAC Address
The physical address of the Media Access Control device.

MAC (Media Access Control)
Media Access Control (MAC) is the protocol governing access to the network. The MAC device is located between receive and transmit paths. Among its functions are the controlling of ranging, the assignment of frequencies, and the allocation of time slots.

MCNS
Multimedia Cable Network System

Modulation
A controlled variation of any property of a carrier wave for transferring data.

Modulator
Encoding, modulation, frequency conversion, D/A conversion, etc.

MSO
Multiple Service Operator

NAT
Network **A**ddress **T**ranslation, technique used to share a single IP address to provide internet access to a LAN.

Network Interface Card
A Network Interface Card (NIC) is a plug-in circuit board installed in an expansion slot of the computer. The NIC (also called an Ethernet card) takes parallel data from the computer, converts it to serial data, packets it, and sends it out over a 10BaseT cable.

OS (Operating System)
The basic software that allows application programs to access a computer's hardware resources.

Packet loss
Number of data packets that are lost in transmission.

Ping
Program to measure network latency.

QAM (Quadrature Amplitude Modulation)
QAM is a method of combining two amplitude-modulated signals into a single channel, thereby doubling the effective bandwidth. QAM is used with pulse amplitude modulation (PAM) in digital systems, especially in wireless applications.

In a QAM signal, there are two carriers, each having the same frequency but differing in phase by 90 degrees (one quarter of a cycle, from which the term quadrature arises). One signal is called the I signal, and the other is called the Q signal. Mathematically, one of the signals can be represented by a sin wave, and the other by a cosine wave. The two modulated carriers are combined at the source for transmission. At the destination, the carriers are separated, the data is extracted from each, and then the data is combined into the original modulating information.

QoS
Quality of Service. Often used to indicate a certain service level guaranty.

QPSK
Quadrature Phase Shift Keying

QPSK is a digital frequency modulation technique used for sending data over coaxial cable networks. Since it's both easy to implement and fairly resistant to noise, QPSK is used primarily for sending data from the cable subscriber upstream to the Internet.

RF (Radio Frequency)
A range of the electromagnetic spectrum. Signals in this frequency range can be transmitted through the air or through a wire. High-speed cable modems use RF technology to send and receive signals over the cable television network.

RJ45
The type of connector used with twisted-pair Ethernet wiring.

SNMP
Simple Network Management Protocol

TCP
Transmission Control Protocol. This standard provides transmission control for applications to ensure reliable delivery of data despite changing network conditions, such as congestion or failure of a segment of the network. TCP is the transport layer portion of TCP/IP, the most commonly used protocol suite for the Internet.

TCP/IP
Transmission Control Protocol/Internet Protocol. The most commonly used protocol suite for the Internet; refers to two of its most import protocols, TCP and IP.

TFTP
Trivial File Transfer Protocol

ToD
Time of Date

Tuner
Converts TV channels to a fixed lower frequency (6 ~ 40 MHz)

Two-Way Cable Modem Access
Cable access that allows data to flow in both the upstream and downstream directions.

UDP
Part of the TCP/IP protocol used to exchange data over the internet

Upstream
Indicates the direction of the flow of a data stream from the user’s computer to the network headend.

USB (Universal Serial Bus)
The Universal Serial Bus (USB) replaces many different types of serial and parallel port connectors with one standard plug and port combination.

10BaseT
An unshielded, twisted pair cable with RJ-45 connectors used with an Ethernet LAN. "10" indicates the speed (10 Mbps), "Base" refers to baseband technology, and "T" means twisted pair cable.

64QAM
64-State Quadrature Amplitude Modulation
This digital frequency modulation technique is primarily used for sending data downstream over a coaxial cable network. 64QAM is very efficient, supporting up to 28-mbps peak transfer rates over a single 6-MHz channel. But 64QAM's susceptibility to interfering signals makes it ill suited to noisy upstream transmissions (from the cable subscriber to the Internet).